8/7/20 (Item 20 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

08286164 BIOSIS NO.: 000043052237
INCREASED IMMUNOGENICITY OF GD3 GANGLIOSIDE AFTER COVALENT ATTACHMENT TO
PROTEINS

AUTHOR: HELLING F; LLOYD K O; OETTGEN H F; LIVINGSTON P O
AUTHOR ADDRESS: MEMORIAL SLOAN-KETTERING CANCER CENTER, NEW YORK, N.Y.. 10021.

JOURNAL: 83RD ANNUAL MEETING OF THE AMERICAN ASSOCIATION FOR CANCER RESEARCH, SAN DIEGO, CALIFORNIA, USA, MAY 20-23, 1992. PROC AM ASSOC CANCER RES ANNU MEET 33 (0). 1992. 335.
CODEN: PAMRE
DOCUMENT TYPE: Meeting
RECORD TYPE: Citation
LANGUAGE: ENGLISH

[redacted]

113036130 CA: 113(5)36130h JOURNAL
Generation of cell surface neogangliproteins. GM1-neogangliproteins are nonfunctional receptors for cholera toxin
AUTHOR(S): Pacuszka, Tadeusz; Fishman, Peter H.
LOCATION: Lab. Mol. Cell. Neurobiol., Natl. Inst. Neurol. Disord. Stroke, Bethesda, MD, 20892, USA
JOURNAL: J. Biol. Chem. DATE: 1990 VOLUME: 265 NUMBER: 13 PAGES: 7673-8 CODEN: JBCHA3 ISSN: 0021-9258 LANGUAGE: English
SECTION:
CA204005 Toxicology
CA226XXX Biomolecules and Their Synthetic Analogs
IDENTIFIERS: cholera toxin receptor neoganglioprotein
DESCRIPTORS:
Receptors...
for cholera toxin, GM1 neogangliproteins on animal cells as nonfunctional
Toxins,cholera...
receptors for, GM1 neogangliproteins on animal cells as nonfunctional
CAS REGISTRY NUMBERS:

[redacted]

The precursor of sulfatide activator protein is processed to three different proteins

AUTHOR(S): Fuerst, Werner; Machleidt, Werner; Sandhoff, Konrad
LOCATION: Inst. Org. Chem. Biochem., Univ. Bonn, D-5300/1, Bonn, Fed. Rep. Ger.

JOURNAL: Biol. Chem. Hoppe-Seyler DATE: 1988 VOLUME: 369 NUMBER: 5
PAGES: 317-28 CODEN: BCHSEI ISSN: 0177-3593 LANGUAGE: English
SECTION:
CA206003 General Biochemistry
IDENTIFIERS: sequence component C activator glycoprotein, sulfatide activator protein precursor processing, glucosylceramidase activator A1 precursor processing

DESCRIPTORS:
Glycoproteins,specific or class, component C...
formation of, precursor of human kidney processing in, formation of sulfatide hydrolysis-activating and glucosylceramidase-activating proteins in relation to
Glycoproteins,specific or class, glucosylceramide hyrolysis-activating, A1 ...
formation of, precursor of human kidney processing in, formation of sulfatide hydrolysis-activating protein and component C in relation to
Glycoproteins,specific or class, ganglioside GM1 hydrolysis-activating...
formation of, precursor of human kidney processing in, glucosylceramidase hydrolysis-activating A1 protein and component C formation in relation to
Protein sequences...
of component C, of human kidney, complete
Conformation and Conformers...
of sphingolipid hydrolysis-activating protein precursor, of human kidney, sulfatide activator and glucosylceramidase activator and component C in relation to
Protein formation...
of sulfatide activator and glucosyl ceramidase activator A1 and component C of human kidney, sphingolipid hydrolysis-activating protein precursor processing in
CAS REGISTRY NUMBERS:
37228-64-1 activator A1 of, formation of, of human kidney, precursor

processing in
115966-30-8 amino acid sequence of
19600-01-2 ozonolysis and reductive amination of
116138-45-5DP reaction products with Affi-Gel 10, prepn. of, for affinity chromatog. of ganglioside-binding proteins
60454-66-2DP reaction products with ganglioside GM2 deriv., prepn. of, for affinity chromatog. of ganglioside-binding proteins

2/7/19 (Item 19 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

03204036 BIOSIS NO.: 000071017147
AFFINITY CHROMATOGRAPHIC PURIFICATION OF ANTI GLYCO LIPID ANTIBODIES AND THEIR APPLICATION TO THE MEMBRANE STUDIES ANTI GALACTO CEREBROSIDE ANTIBODIES

AUTHOR: UCHIDA T; NAGAI Y
AUTHOR ADDRESS: DEP. PATHOBIOCHEM. CELL RES., INST. MED. SCI., UNIV. TOKYO, SHIROKANEDAI, MINATO, TOKYO 108, JPN.

JOURNAL: J BIOCHEM (TOKYO) 87 (6). 1980 1829-1842.
FULL JOURNAL NAME: Journal of Biochemistry (Tokyo)
CODEN: JOBIA
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: Galactocerebroside was derivatized [from bovine spinal cord] for use as the ligand for affinity chromatography in a high yield. The derivatization was performed by ozonolysis of the double bond of the sphingosine moiety in Baeyer-Villiger solvent, pinacolone and by oxidation. The carboxy group of the derivative was coupled to amino-alkyl glass beads with N',N'-carbonyl-diimidazole as the condensation reagent; the affinity adsorbent coupled with 2-hydroxy-3-N-acylamido-4-O-.beta.-galactosyl butyric acid was obtained. The antibodies tightly bound to the adsorbent were eluted with a weak chaotropic reagent, 1.0 M NaI, and successively with a stronger chaotrope, 3.0 M NaSCN. The antibody eluted with 3.0 M NaSCN was characterized by complement fixation assay using the liposome system. The antibody showed strong affinity for galactocerebroside and a weak cross-reaction with galactosyl(.beta.1 .fwdarw. 4)glucosyl ceramide (CDH); no reactions were observed with the other structurally related glycosphingolipids such as glucocerebroside, galactocerebroside-3'-sulfate (CSE), galactosyl(.alpha.1 .fwdarw. 4)galactosyl(.beta.1 .fwdarw. 4)glucosyl ceramide (CTH) and galactosyl(.beta.1 .fwdarw. 3)N-acetylgalactosaminyl(.beta.1 .fwdarw. 4)[N-acetylneuraminyl(.alpha.2 .fwdarw. 3)]galactosyl(.beta.1 .fwdarw. 4)glucosyl ceramide (GM1 ganglioside) or with lecithin-cholesterol, suggesting that the antibody recognizes the galactose moiety and the .beta.-anomeric configuration, and possibly the polar ceramide portion of galactocerebroside. Lecithin and cholesterol as auxiliary lipids were essential for the complement fixation reaction; the concentration of cholesterol in the liposome was particularly important. The optimal ratio for the maximal reactions among compositional lipids of the antigen liposome was limited to a narrow range. The reactivity of the purified anti-galactocerebroside antibody showed that this antibody could be classified as the type X antibody that Rapport, Cavanna and Graf reported.

Waiting on these
Refs to arrive next week!

[redacted]

09365736 BIOSIS NO.: 199497374106
Synthesis of GD-3 as a 4-methyl-3-pentenyl glycoside and subsequent conjugation to HSA.

AUTHOR: Diakur James(a); Noujaim Antoine A
AUTHOR ADDRESS: (a)Fac. Pharmacy Pharmaceutical Sci., Univ. Alberta, Edmonton, AB T6G 2N8, Canada

JOURNAL: Journal of Carbohydrate Chemistry 13 (5):p777-797 1994
ISSN: 0732-8303
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The total synthesis of the tetrasaccharide sequence of the ganglioside GD-3 (alpha-D-Neup5Ac-(2 fwdarw 8)-alpha-D-Neup5Ac-(2 fwdarw 3)-beta-D-Galp-(1 fwdarw 4)-beta-D-Glcp-) as the 4-methyl-3-pentenyl glycoside (13) has been accomplished in a relatively straightforward manner. This derivative displays reasonable 1H NMR characteristics in D-2O and has subsequently been coupled to a carrier protein by employing the ozonolysis-reductive amination procedure.

2/7/4 (Item 4 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

09441168 BIOSIS NO.: 199497449538
Specific immunization using keyhole limpet hemocyanin-ganglioside conjugates.

AUTHOR: Jennemann Richard; Gnewuch Carsten; Bosslet Silke; Bauer B L; Wiegandt Herbert(a)
AUTHOR ADDRESS: (a)Inst. Physiologische Chemie, Abtlg. Neurochirurgie, Philipps-Univ., Marburg, Germany

JOURNAL: Journal of Biochemistry (Tokyo) 115 (6):p1047-1052 1994
ISSN: 0021-924X
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: In a search for adjuvants of non-bacterial origin for immunization with ganglioside, we investigated whether chemical coupling to immune stimulatory protein could increase the immunogenicity of sialoglycosphingolipid. A novel method for the linkage of glycosphingolipids, including gangliosides, to protein was established. The procedure includes lysis of the sphingoid double bond by ozone, reduction of the ozonolysis product to the aldehyde, and coupling to amino groups, either directly by reductamination, or by conjugation via a long aliphatic chain dicarboxylic acid linker. Using this method, gangliosides Gfpt1 (IV-2-Fuc-, II-3NeuAc-Gg-4Cer), Glac2 (II-3(NeuAc)-2-LacCer), and Gtet1 (II-3NeuAc-Gg-4Cer) were coupled to keyhole limpet hemocyanin (KLH), and the immunogenicity of the conjugates was tested. Immunization of mice with the KLH-ganglioside conjugates led in each case to the formation of IgG- and IgM antibodies that recognized the underivatized gangliosides, respectively. In contrast to this, mixtures of KLH and ganglioside proved ineffective for immunization. KLH-tumor-associated ganglioside conjugates may, therefore, be considered as possible vaccines in immune therapy of cancer.

[redacted]

8/7/60 (Item 11 from file: 73)
DIALOG(R)File 73:EMBASE

05173578 EMBASE No: 1992313812
Construction of cancer vaccines with carbohydrate and protein (peptide) tumor antigens
Livingston P.O.
Department of Medicine, Memorial Sloan-Kettering Cancer Cent,New York, NY 10021 United States
Current Opinion in Immunology (CURR. OPIN. IMMUNOL.) (United Kingdom) 1992, 4/5 (624-629)

CODEN: COPIE ISSN: 0952-7915
DOCUMENT TYPE: Journal; Review
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

2/7/2 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

10843872 BIOSIS NO.: 199799465017
The degradation of glycosphingolipids by air.

AUTHOR: Jennemann Richard; Bauer Bernhard L; Wiegandt Herbert(a)
AUTHOR ADDRESS: (a)Inst. fuer Physiologische Chemie, Philipps-Univ., Karl-von-Frisch-Str. 1, 35043 Marburg, Germany

JOURNAL: Journal of Biochemistry (Tokyo) 121 (1):p150-154 1997
ISSN: 0021-924X
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Exposure of glycosphingolipids to air irreversibly destroys the integrity of these lipids within a few hours. It was established that among the natural constituents of air, ozone, at commonly observed daytime levels, is responsible for the observed degradation. As one product of the reaction of glycosphingolipids with air, an aldehydic fragment containing the carbohydrate moiety was identified. This aldehydic fragment was identical to the one obtained by classical glycosphingolipid ozonolysis. Identical with the latter, the air induced product is further fragmented by mild alkali treatment with concomitant liberation of the free reducing oligosaccharide. As a consequence of the alteration of glycosphingolipids by air, it was shown that the accuracy of methods of analysis of these glycoconjugates that depend on their physico-chemical integrity, e.g., by tlc-immune overlay, is severely influenced by their prior exposure to the atmosphere.

[redacted]

09506799 BIOSIS NO.: 199497515169
Ganglioside conjugate vaccines: Immunotherapy against tumors of neuroectodermal origin.

AUTHOR: Helling Friedhelm(a); Livingston Philip O
AUTHOR ADDRESS: (a)Meml. Sloan-Kettering Cancer Cent., New York, NY 10021, USA

JOURNAL: Molecular and Chemical Neuropathology 21 (2-3):p299-309 1994
ISSN: 1044-7393
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Gangliosides are known to be suitable targets for immune attack against cancer but they are poorly immunogenic. Active immunization with ganglioside/BCG or liposome vaccines results in moderate titer IgM antibody responses of short duration. Covalent attachment of poorly immunogenic antigens to immunogenic proteins is a potent method for inducing an IgG antibody response. GD3, a dominant ganglioside on malignant melanoma, was modified by ozone cleavage of the double bond in the ceramide backbone an aldehyde group introduced and used for coupling via reductive amination to E-aminolysyl groups of proteins. Utilizing this method, GD3 conjugates were constructed with: 1. Synthetic multiple antigenic peptide (MAP) constructs expressing 4 repeats of a malaria T-cell epitope; 2. Outer membrane proteins (OMP) of Neisseria meningitidis; 3. Cationized bovine serum albumin; 4. Keyhole limpet hemocyanin (KLH); and 5. Polylysine. In addition, conjugates containing only the GD3 oligosaccharide were synthesized. AU constructs were tested for antigenicity using anti-GD3 antibody R24, and for immunogenicity in mice. Serum antibody levels were analyzed by ELISA and immune thin-layer chromatography. Results in the mouse show a significant improvement in the IgM antibody response and a consistent IgG response against GD3 using GD3-KLH conjugates. Other carrier proteins and the use of GD3 oligosaccharide were significantly less effective. If improved immunogenicity and clinical benefit with conjugate vaccines can be demonstrated in patients with melanoma, this approach may be applicable to patients with other tumors of neuroectodermal origin, including gliomas, glioblastomas, astrocytomas, and neuroblastomas.

[redacted]

08695515 BIOSIS NO.: 199345113590
Construction of immunogenic GD3-conjugate vaccines.
BOOK TITLE: Annals of the New York Academy of Sciences; Specific immunotherapy of cancer with vaccines

AUTHOR: Helling F; Calves M; Shang Y; Oettgen H F; Livingston P O
BOOK AUTHOR/EDITOR: Bystryn J-C; Ferrone S; Livingston P: Eds
AUTHOR ADDRESS: Memorial Sloan-Kettering Cancer Cent., 1275 York Ave., New York, NY 10021, USA

JOURNAL: Annals of the New York Academy of Sciences 690p396-397 1993

BOOK PUBLISHER: New York Academy of Sciences, 2 East 63rd Street, New York, New York 10021, USA
CONFERENCE/MEETING: Meeting Washington, D.C., USA January 21-24, 1993
ISSN: 0077-8923 ISBN: 0-89766-826-X (paper); 0-89766-825-1 (cloth)
DOCUMENT TYPE: Article
RECORD TYPE: Citation
LANGUAGE: English

ABSTRACT: Proteins that bind carbohydrates can be used to isolate specific sugar sequences from complex mixtures. Free sialyloligosaccharides [human milk] or sialyloligosaccharides released from gangliosides [bovine brain; dog erythrocyte] by ozonolysis and alkaline fragmentation are labeled at their reducing ends by reduction with NaB[3H]4. After partial separation by column chromatography, oligosaccharide fractions are tested for binding to anti-sialyloligosaccharide antibodies and cholera toxin by a nitrocellulose filter assay. Oligosaccharides bound by the proteins can be eluted from the filters and further characterized. The method can be used to isolate and identify carbohydrate ligands of cell surfaces.

[redacted]

03504542 BIOSIS NO.: 000073007622
GLYCO LIPIDS OF CELL SURFACES ISOLATION OF SPECIFIC SUGAR SEQUENCES USING CARBOHYDRATE BINDING PROTEINS

AUTHOR: SMITH D F; MAGNANI J L; GINSBURG V
AUTHOR ADDRESS: NATL. INST. ARTHRITIS METAB. DIG. DIS., BETHESDA, MD. 20205.

JOURNAL: ARCH BIOCHEM BIOPHYS 209 (1). 1981. 52-56.
FULL JOURNAL NAME: Archives of Biochemistry and Biophysics
CODEN: ABBIA
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: Proteins that bind carbohydrates can be used to isolate specific sugar sequences from complex mixtures. Free sialyloligosaccharides [human milk] or sialyloligosaccharides released from gangliosides [bovine brain; dog erythrocyte] by ozonolysis and alkaline fragmentation are labeled at their reducing ends by reduction with NaB[3H]4. After partial separation by column chromatography, oligosaccharide fractions are tested for binding to anti-sialyloligosaccharide antibodies and cholera toxin by a nitrocellulose filter assay. Oligosaccharides bound by the proteins can be eluted from the filters and further characterized. The method can be used to isolate and identify carbohydrate ligands of cell surfaces.

[redacted]

03036556 BIOSIS NO.: 000070062174
ACYL SPHINGOIDS AND RELATED OXAZOLINES

AUTHOR: GEORGE E E; POLYA J B
AUTHOR ADDRESS: DEP. CHEM., UNIV. TASMANIA, P.O. BOX 252C, HOBART, TASMANIA 7001, AUST.

JOURNAL: AUST J CHEM 32 (12). 1979 (RECD. 1980). 2701-2712.
FULL JOURNAL NAME: Australian Journal of Chemistry
CODEN: AJCHA
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: Oxazolines prepared from sphingoids or analogues and imidic esters were obtained as mixtures in which the isomer with heterocyclic O derived from O1 of the parent sphingoid predominated in the case of erythro sphingoids, and that with original O3 in the case of threo sphingoids. The separated dry oxazolines were stable at 0.degree. but isomerized in alcohol, ether or chloroform solution. Hydrolysis of the oxazolines in acid gave the salts of the expected O-acyl compounds or the free O-acyl compounds at pH 5-6, while N-acyl compounds were formed at pH 8; these transformations occurred without change of configuration, except for some inversion of oxazolines cotaining the original O3 of erythro sphingenine. O-Acyl compounds changed into N-acyl isomers in neutral or alkaline media, but the conversion of N-acyl compounds into O-acyl isomers occurred in traces only. Oxazolines could not be detected as intermediates in the transacylation of O- or N-acyl sphingoids. Changes of aged ceramide solutions are ascribed to photooxidation rather than transacylation.

[redacted]

2/7/24 (Item 2 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

05924778 Genuine Article#: XG878 Number of References: 42
Title: Preparation of aldehydo sugars and sugar acids via ozonolysis of sugar hydrazones
Author(s): Spencer RP; Yu HKB; Cavallaro CL; Schwartz J (REPRINT)
Corporate Source: PRINCETON UNIV,DEPT CHEM/PRINCETON//NJ/08544 (REPRINT); PRINCETON UNIV,DEPT CHEM/PRINCETON//NJ/08544
Journal: JOURNAL OF ORGANIC CHEMISTRY, 1997, V62, N13 (JUN 27), P4507-4509
ISSN: 0022-3263 Publication date: 19970627
Publisher: AMER CHEMICAL SOC, 1155 16TH ST, NW, WASHINGTON, DC 20036
Language: English Document Type: ARTICLE

[redacted]

2/7/44 (Item 4 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

00994218 71026122
Chemistry of gangliosides.
McCluer RH
Chem Phys Lipids (NETHERLANDS) Oct 1970, 5 (1) p220-34, ISSN 0009-3084 Journal Code: CZW
Languages: ENGLISH
Document type: JOURNAL ARTICLE; REVIEW
(51 Refs.)

[redacted]

8/7/11 (Item 11 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

09295476 BIOSIS NO.: 199497303846
Phase I trial immunological adjuvant QS-21 with a GM2-ganglioside-KLH conjugate vaccine in patients with malignant melanoma.

AUTHOR: Helling F(a); Livingston P O; Adluri S; Shang A; Yao T-J; Kensil C R; Newman M J; Marciani D
AUTHOR ADDRESS: (a)Meml. Sloan-Kettering Cancer Cent., New York, NY 10021, USA

JOURNAL: Proceedings of the American Association for Cancer Research Annual Meeting 35 (0):p515 1994

CONFERENCE/MEETING: 85th Annual Meeting of the American Association for Cancer Research San Francisco, California, USA April 10-13, 1994
ISSN: 0197-016X
RECORD TYPE: Citation
LANGUAGE: English

[redacted]

8/7/24 (Item 24 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

07614260 BIOSIS NO.: 000091132144
ANTIBODY RESPONSE TO IMMUNIZATION WITH PURIFIED GD3 GANGLIOSIDE AND GD3 DERIVATIVES LACTONES AMIDE AND GANGLIOSIDOL IN THE MOUSE

AUTHOR: RITTER G; BOOSFELD E; CALVES M J; OETTGEN H F; OLD L J; LIVINGSTON P O
AUTHOR ADDRESS: FIDIA RES. LABS., DEP. IMMUNOL., 35031 ABANO TERME, VIA PONTE DELLA FABBRICA 3/A, ITALY.

JOURNAL: IMMUNOBIOLOGY 182 (1). 1990. 32-43.
FULL JOURNAL NAME: Immunobiology
CODEN: IMMND
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: GD3 is the ganglioside most abundantly expressed on the cell surface of human melanoma, and treatment with a monoclonal antibody recognizing GD3 has induced major responses in a small proportion of patients. However, we have been unable to induce production of GD3 antibodies in melanoma patients by active immunization with GD3-expressing melanoma cells or purified GD3. In this report we describe attempts to increase the immunogeneity of GD3 in the mouse by chemical modification. GD3 lactone I and II, GD3 amide and GD3 gangliosidol were synthesized, and the humoral immune response to these derivatives was compared with the response to unmodified GD3. The GD3 derivatives were more immunogenic than GD3. At a low dose all congeners induced an IgM response, with antibody titers higher than those elicited by low-dose GD3. The gangliosidol and amide derivatives also induced an IgG response. IgM antibodies induced by immunization with GD3 lactone I cross-reacted with purified GD3 and GD3-expressing melanoma cells. Titers of GD3 cross-reactive antibodies were slightly higher than after immunization with GD3 itself at the same low dose. IgM and IgG antibodies induced by the other congeners did not cross-react with GD3.

[redacted]

8/7/30 (Item 30 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

06742218 BIOSIS NO.: 000088051648
ANTIBODY RESPONSE AFTER IMMUNIZATION WITH THE GANGLIOSIDES GM1 GM2 GM3 GD2
AND GD3 IN THE MOUSE

AUTHOR: LIVINGSTON P O; RITTER G; CALVES M J
AUTHOR ADDRESS: MEML. SLOAN-KETTERING CANCER CENT., 1275 YORK AVE., NEW YORK, N.Y. 10021.

JOURNAL: CANCER IMMUNOL IMMUNOTHER 29 (3). 1989. 179-184.
FULL JOURNAL NAME: Cancer Immunology Immunotherapy
CODEN: CIIMD
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: The gangliosides GM2, GD2 and GD3 are differentiation antigens expressed on the cell surface of human melanomas and other cancers of neuroectodermal origin. We have compared the antibody response after vaccination with gangliosides GM1, GM2, GM3, GD2 and GD3 in the mouse. Purified gangliosides were injected subcutaneously alone or attached to Salmonella minnesota mutant R595 after pretreatment of the mice with low-dose cyclophosphamide. Spontaneous GM1 antibodies, but not antibodies against the other gangliosides, were detected in many mice, the incidence increasing with age. Purified gangliosides injected alone (in saline) induced no antibody response. R595/GM1 and R595/GD3 vaccination induced consistent high-titer antibody responses. R595/GM2 and R595/GD2 induced occasional antibody responses, and R595/GM3 induced no antibody response. Comparison of the antibody responses induced against these gangliosides in the mouse with those in man reveals that GM1, GM3 and GD2 have a similar immunogenicity in both species while the relative immunogenicity of GM2 and GD3 is reversed. To understand better the basis for these differences, the antibody responses against the five gangliosides in man and the mouse were compared with their known expression in normal tissues. No correlation was detected between ganglioside expression in normal brain and immunogenicity, consistent with this being a cloistered site. The antibody responses did correlate inversely with expression in normal non-brain human and murine tissues. Variations between species of ganglioside immunogenicity may reflect variations in ganglioside expression in normal tissues.

05636235 BIOSIS NO.: 000083109380
APPROACHES TO AUGMENTING THE IMMUNOGENICITY OF THE GANGLIOSIDE GM2 IN MICE
PURIFIED GM2 IS SUPERIOR TO WHOLE CELLS

AUTHOR: LIVINGSTON P O; CALVES M J; NATOLI E J JR
AUTHOR ADDRESS: MEMORIAL SLOAN-KETTERING CANCER CENTER, NEW YORK, NY 10021.

JOURNAL: J IMMUNOL 138 (5). 1987. 1524-1529.
FULL JOURNAL NAME: Journal of Immunology
CODEN: JOIMA
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: The gangliosides GM2, GD2, and GD3 are differentiation antigens largely restricted to cells of neuroectodermal origin. They are expressed on most melanomas, astrocytomas, and neuroblastomas and have been shown to function as effective targets for monoclonal antibodies. In previous studies, we have immunized melanoma patients and mice with a series of melanoma cell vaccines containing these antigens, but have observed only occasional antibody responses. We report here the results of experiments in which an irradiated whole cell vaccine shown previously to be optimal was compared with a series of vaccines containing purified GM2. Mice were pretreated with low dose cyclophosphamide (Cy), or not, and were immunized twice with syngeneic melanoma cells (JB-RH) known to contain 60 .mu.g of GM2 or with vaccines containing 50 .mu.g of purified GM2. Serum was obtained at regular intervals and was tested by immune adherence, complement dependent cytotoxicity, and protein A assays on the JB-RH cell line. The whole cell vaccine, GM2 alone, GM2 incorporated into complete Freund's adjuvant, and GM2 attached to Escherichia coli were all minimally immunogenic. GM2 attached to Salmonella minnesota or BCG, and GM2 attached to certain liposome preparations containing monophosphoryl lipid A, were found to be moderately immunogenic. GM2 attached to the R595 mutant of Samonella minnesota was found to be significantly more immunogenic. Pretreatment with Cy significantly increased the immunogenicity of this vaccine. The specificities of selected sera were tested in inhibition assays and were limited to GM2. Antibodies produced after immunization were generally exclusively IgM and mediated potent complement-dependent cytotoxicity on JB-RH cells. These results identify R595 as the most effective adjuvant tested for augmenting the immunogenicity of GM2 and show that with regard to antibody production, purified tumor antigen presented optimally can be more immunogenic than optimally presented whole tumor cells containing the same amount of antigen.

[redacted]

8/7/40 (Item 40 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

04954284 BIOSIS NO.: 000031029416
APPROACHES TO AUGMENTING THE IMMUNOGENICITY OF THE GANGLIOSIDE GM-2 IN MICE

AUTHOR: LIVINGSTON P O; CALVES M J; NATOLI E J JR
AUTHOR ADDRESS: SLOAN-KETTERING INST., N.Y.C., 10021.

JOURNAL: SEVENTY-SEVENTH ANNUAL MEETING OF THE AMERICAN ASSOCIATION FOR CANCER RESEARCH, LOS ANGELES, CALIF., USA, MAY 7-10, 1986. PROC AM ASSOC CANCER RES ANNU MEET 27 (0). 1986. 364.
CODEN: PAMRE
DOCUMENT TYPE: Meeting
RECORD TYPE: Citation
LANGUAGE: ENGLISH

8/7/68 (Item 5 from file: 144)
DIALOG(R)File 144:Pascal

11336598 PASCAL No.: 94-0158357
G SUB D SUB 3 vaccines for melanoma : superior immunogenicity of keyhole limpet hemocyanin conjugate vaccines
HELLING F; SHANG A; CALVES M; SHANG S; REN S; YU R K; OETTGEN H F; LIVINGSTON P O
Memorial Sloan-Kettering cancer cent., dep. medicine, immunology program, New York NY 10021, USA
Journal: Cancer research : (Baltimore), 1994, 54 (1) 197-203
ISSN: 0008-5472 CODEN: CNREA8 Availability: INIST-5088; 354000024659470350
No. of Refs.: 40 ref.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: USA
Language: English
Cell surface gangliosides show altered patterns of expression as a consequence of malignant transformation and have therefore been of interest as potential targets for immunotherapy, including vaccine construction. One obstacle has been that some of the gangliosides that are overexpressed in human cancers are poorly immunogenic in humans. A case in point is G SUB D SUB 3 , a prominent ganglioside of human malignant melanoma. Using an approach that has been effective in the construction of bacterial carbohydrate vaccines, we have succeeded in increasing the immunogenicity of G SUB D SUB 3 in the mouse by conjugating the ganglioside with immunogenic carriers. Several conjugation methods were used